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Pharmacy Newsletter : May 2013

Pharmacy Department
Aga Khan University Hospital

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Pharmacy Newsletter provides information regarding the decisions of P & TC, current concepts in drug therapy, warnings and cautions issued by various regulatory agencies, drug interactions, ADRs and matters related to drug usage

Opinions expressed are of authors and does not necessarily represent AKUH's view/recommendations.
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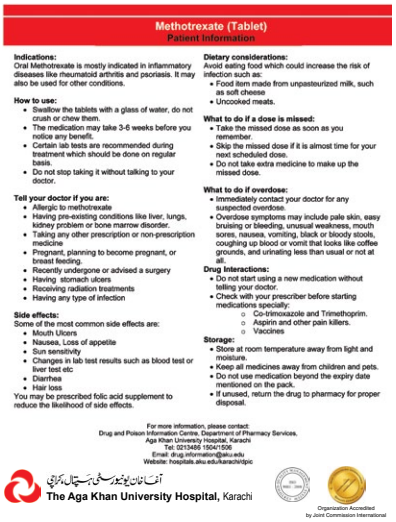
Inside this Issue:

Patient Information Brochure

Medication errors are important cause of healthcare associated patient harm. Errors can occur at the stage of prescribing, transcribing, dispensing and administration. Studies estimated that about 38% medication errors occur at the time of administration and lack of patient's knowledge about drugs is a major contributing cause. In order to provide better understanding of medication use, a group of pharmacists deliberated on the subject and prepared easy-to-comprehend patient medication Information brochures of selected critical medications. These seven brochures are single page handout both in English and Urdu translation designed in order to enhance the awareness among the patients who are using these critical medications for chronic illnesses.


Methotrexate (Tablet)
Patient Information

Indications:
Oral Methotrexate is mostly indicated in inflammatory diseases like rheumatoid arthritis and psoriasis. It may also be used for other conditions.

How to use:
- Swallow the tablets with a glass of water, do not crush or chew them.
- The medication may take 3-6 weeks before you notice any benefit.
- Certain lab tests are recommended during treatment which should be done on regular basis.
- Do not stop taking it without talking to your doctor.

Tell your doctor if you are:
- Allergic to methotrexate
- Having pre-existing conditions like liver, lungs, kidney problem or bone marrow disorder.
- Taking any other prescription or non-prescription medicine
- Pregnant, planning to become pregnant, or breast feeding.
- Recently undergone or advised a surgery
- Having stomach ulcers
- Receiving radiation treatments
- Having any type of infection

Side effects:
Some of the most common side effects are:
- Mouth Ulcers
- Nausea, Loss of appetite
- Sun sensitivity
- Changes in lab test results such as blood test or liver test etc
- Diarrhea
- Hair loss

You may be prescribed folic acid supplement to reduce the likelihood of side effects.

Dietary considerations:
Avoid eating food which could increase the risk of infection such as:
- Food item made from unpasteurized milk, such as soft cheese
- Uncooked meats.

What to do if a dose is missed:
- Take the missed dose as soon as you remember.
- Skip the missed dose if it is almost time for your next scheduled dose.
- Do not take extra medicine to make up the missed dose.

What to do if overdose:
- Immediately contact your doctor for any suspected overdose.
- Overdose symptoms may include pale skin, easy bruising or bleeding, unusual weakness, mouth sores, nausea, vomiting, black or bloody stools, coughing up blood or vomit that looks like coffee grounds, and urinating less than usual or not at all.

Drug Interactions:
- Do not start using a new medication without telling your doctor.
- Check with your prescriber before starting medications specially:
  - Co-trimoxazole and Trimethoprim.
  - Aspirin and other pain killers.
  - Vaccines

Storage:
- Store at room temperature away from light and moisture.
- Keep all medicines away from children and pets.
- Do not use medication beyond the expiry date mentioned on the pack.
- If unused, return the drug to pharmacy for proper disposal.

For more information, please contact:
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The Aga Khan University Hospital, Karachi

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With the intent to reduce patient harm by making our patients more educated, this will build better relationship with the patients along with increase satisfaction level.

"Beers Criteria"– Medication Safety in Elderly Patients

Contributed by: Zulfiqar Khalil (Intern Pharmacist)

Geriatrics is a special population of patients with increased risk of adverse effects and medication errors. In 1991, Dr. Mark Beers and colleagues published criteria developed by consensus and literature review identifying inappropriate medication use among institutionalized elderly patients. Since 1991, these criteria have been updated and presently, the Beers criteria (Beers List) is one of the most widely cited criteria for inappropriate medication use in older adults aged 65 years or greater.

The Beers criteria cover 3 categories of inappropriate medication use:

(1) Medications/ classes of medications that should generally be avoided in patients 65 years or older because are either ineffective, or pose an unnecessary risk for older patients and a safer alternative is available.

(2) Medications that should be avoided in older persons known to have specific medical conditions; and/or

(3) Medications to be used with caution. With each recommendation, the quality of supporting evidence is ranked as low, moderate, or high, and the strength of each recommendation is rated as strong, weak, or insufficient.

The following table represents the Beers Criteria listing the categories of inappropriate medication use by drug along with the strength of recommendation rating, and quality of supporting evidence.

Organ System or Therapeutic Category	Rationale	Recommendation	Quality of Evidence	Strength of Recommendation
Anticholinergics (excludes TCAs) - First-generation antihistamines (as single agent or as part of combination products) Chlorpheniramine Clemastine, Cyproheptadine Diphenhydramine (oral) Doxylamine, Hydroxyzine Promethazine, Triprolidine	Highly anticholinergic; clearance reduced with advanced age, and tolerance develops when used as hypnotic; greater risk of confusion, dry mouth, constipation, and other anticholinergic effects and toxicity. Use of diphenhydramine in special situations such as acute treatment of severe allergic reaction may be appropriate	Avoid	Hydroxyzine and promethazine: high; All others: moderate	Strong
Antispasmodics - Belladonna alkaloids Clidinium-chlordiazepoxide Dicyclomine Hyoscyamine	Highly anticholinergic, uncertain effectiveness	Avoid except in short-term palliative care to decrease oral secretions	Moderate	Strong
Anti-infective Nitrofurantoin	Potential for pulmonary toxicity; safer alternatives available; lack of efficacy in patients with CrCl < 60 mL/min due to inadequate drug concentration in the urine	Avoid for long-term suppression; avoid in patients with CrCl <60mL/min	Moderate	Strong
Cardiovascular - Alpha1 blockers Doxazosin Prazosin Terazosin	High risk of orthostatic hypotension; not recommended as routine treatment for hypertension; alternative agents have superior risk/benefit profile	Avoid use as an antihypertensive	Moderate	Strong
Antiarrhythmic drugs (Class Ia, Ic, III) Amiodarone Flecainide Procainamide Quinidine	Amiodarone is associated with multiple toxicities, including thyroid disease, pulmonary disorders, and QT- interval prolongation	Avoid antiarrhythmic drugs as first-line treatment of atrial fibrillation	High	Strong
Digoxin > 0.125 mg/d	In heart failure, higher dosages associated with no additional benefit and may increase risk of toxicity; slow renal clearance may lead to risk of toxic effects	Avoid	Moderate	Strong

Central nervous system Tertiary TCAs Amitriptyline, Clomipramine Imipramine	Highly anticholinergic, sedating, and cause orthostatic hypotension	Avoid	High	Strong
Benzodiazepines **Short and intermediate acting:** Alprazolam Lorazepam Temazepam **Long acting:** Chlordiazepoxide Clidinium-chlordiazepoxide Clonazepam Diazepam	Older adults have increased sensitivity to benzodiazepines and slower metabolism of long-acting agents. In general, all benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicle accidents in older adults. May be appropriate for seizure, REM sleep disorders, benzodiazepine or ethanol withdrawal, severe generalized anxiety disorder, periproce-dural anesthesia, end-of-life care	Avoid benzodiazepines (any type) for treatment of insomnia, agitation, or delirium	High	Strong
Nonbenzodiazepine hypnotics Zolpidem	Same as above	Avoid chronic use (> 90 days)	Moderate	Strong
Sulfonylureas Glibenclamide	Greater risk of severe prolonged hypoglycemia in older adults	Avoid	High	Strong
NSAIDs: Aspirin > 325 mg/d Diclofenac Ibuprofen Ketoprofen Mefenamic acid Meloxicam Naproxen Piroxicam Indomethacin Ketorolac	Increases risk of GI bleeding and peptic ulcer disease in high-risk groups, including those aged > 75 or taking oral or parenteral corticosteroids, anticoagulants, or antiplatelet agents. Use of proton pump inhibitor or misoprostol reduces but does not eliminate risk. Upper GI ulcers, gross bleeding, or perforation caused by NSAIDs occur in approximately 1% of patients treated for 3–6 months and in approximately 2–4% of patients treated for 1 year. These trends continue with longer duration of use	Avoid chronic use unless other alternatives are not effective and patient can take gastroprotective agent (proton pump inhibitor or misoprostol)	Moderate Ketorolac: high	Strong
Muscle Relaxants Orphenadrine	Most muscle relaxants are poorly tolerated because of anticholinergic adverse effects, sedation, risk of fracture	Avoid	Moderate	Strong

Note: Only selected medications are depicted in this table, for details please refer to full text in J Am Geriatr Soc 2012 (American Geriatrics Society Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults)

Adverse Drug Reactions – Summary 2012

Adverse drug reaction are any response to a drug that is noxious, unintended and that occurs at doses normally used for prophylaxis, diagnosis or therapy. The main purpose of ADR reporting and monitoring is to provide an indirect measure of the quality of pharmaceutical care through identification of preventable ADRs and anticipatory surveillance for high-risk drugs or patients. The data will help to monitor trends and significant isolated ADRs, create a feedback loop to practitioners, promote educational endeavors to prevent ADRs, and improve patient outcomes.

In the year 2012, a total number of 135 ADRs were reported (with exception of many unreported too). Following are the details of reported ADRs:

Antibiotics:

In the year 2012, majority of ADRs were reported from antibiotic class of drugs. These mainly were rashes and hypersensitivity reactions.

Learning outcomes:

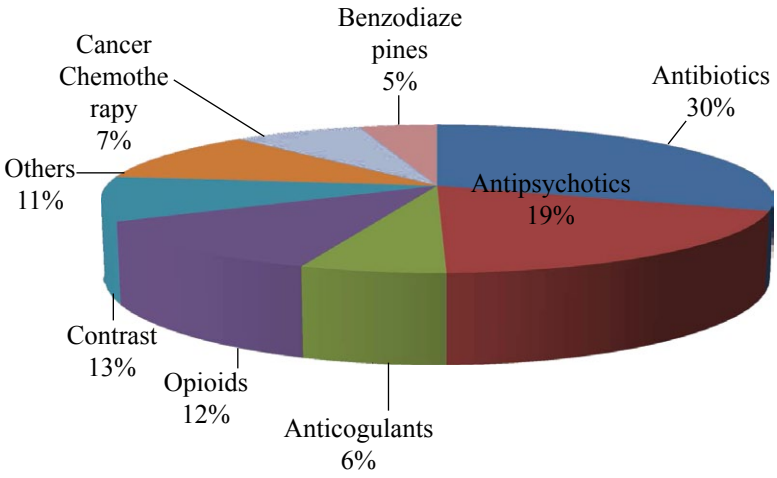
- All antibiotics must be infused slowly over a

period time recommended by the drug information resources (mention on the patient labels).

- Avoid administration of antibiotics in high concentrations where possible, decrease rate of infusion if using maximum concentration of dilution.

- If patient develops allergy or hypersensitivity to any antibiotic it must be documented in patient record and updated in the Pharmacy system to avoid any further administration.

Reported ADRs 2012



Antipsychotics:

The second most frequently reported ADRs were from Neuroleptics class of drugs. Extra Pyramidal Symptoms (EPS), tremor and dystonia were highest in this class. Neuroleptics induced movement disorders are caused by medications that block the action of dopamine.

Learning Outcomes:

- Antipsychotic induced EPS and movement disorders are well documented in the literature; clinicians should anticipate these reactions.

- Elderly patients are usually at high risk. Start the therapy of antipsychotic medications with low doses and gradually increase the dose.

- In order to avoid drug induced postural tremor and daytime tremor elderly patients should take the antipsychotics at bedtime.

- To prevent acute dystonia, a preventative medication along with the antipsychotic such as procyclidine, trihexyphenidyl, diphenhydramine etc. can also be prescribed.

ADR Reporting:

Adverse drug Reactions are reported in AKUH through;

- Yellow Cards

- http://intranet/pharmacy/adrrf.htm

Vote of thanks to all the Physicians, Nurses and Pharmacists who spared some time for patient safety and reported ADRs last Year.